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PRELIMINARY LIST OF COLORADO HEPATICAE

ALEXANDER W. EVANS

The published records on the Hepaticae of Colorado are exceedingly scanty. In 1874 Austin¹ listed fifteen species which had been collected in 1873 by Professor John Wolf, under the auspices of the Wheeler Exploring Expedition. In 1876 Rau² listed five species which had been collected from 1873 to 1875 by Mr. T. S. Brandegee. All subsequent records, with a single exception, are evidently based on these two early lists.

The species listed by Austin are the following: *Riccia Frostii*, *R. Watsoni*, *R. crystallina*, *R. fluitans* var. *lata*, *Marchantia polymorpha*, *Chiloscyphus polyanthus* var. *rivularis*, *Jungermannia bicuspidata*, *J. incisa*, *J. Hornschuchiana*, *J. Muelleri*, *J. cordifolia*, *J. ventricosa*, *Scapania compacta*, *S. undulata*, and *S. uliginosa*. Those listed by Rau include *Marchantia polymorpha* and *Scapania compacta* and, in addition, *Reboulia hemisphaerica*, *Jungermannia pumila*, and *J. trichophylla*.

The first two species of *Riccia* which Austin listed, *R. Frostii* and *R. Watsoni*, were manuscript species, but he published them formally the following year.³ He stated, however, that *R. Watsoni* might be nothing more than the male plant of *R. Frostii*, and at the present time it is so regarded. Another species listed by both Austin and Rau is *Scapania compacta*. In all probability the records are based on incorrect determinations because this species is not now definitely known outside of Europe, except from a single locality in Greenland. The other sixteen species listed may doubtless be accepted as correct, although it is unfortunate that full details are not given about the localities where they were found.

During the past few years the writer has received several small collections of Colorado Hepaticae for determination, and the present paper is based on these collections. It increases the number of species known from the state to forty-one. It is hoped that the publication of this list may arouse further interest in the Hepaticae among the botanists of Colorado, so that in time our knowledge of the hepatic flora of this interesting region may be more complete. The sequence adopted is that of Schiffner in Engler & Prantl's *Die natürlichen Pflanzenfamilien*. The dates given show when each species was first collected, so far as this could be ascertained.

1. *RICCIA FROSTII* Aust. *R. Watsoni* Aust. Along the Platte River, near Denver, 1865, *C. C. Parry*; without definite localities, *J. Wolf*; near Denver, *E. Bethel* 1.

2. *RICCIA LESCURIANA* Aust. Lake Eldora, 1910, *E. Bethel*.

¹ Hepaticae. In Rothrock, J. T., Preliminary report on the botany of Central Colorado 62. Washington. 1874. [Geographical and Geological Exploration and Survey, west of the one hundredth meridian, George M. Wheeler in charge.]

² List of Colorado Musci and Hepaticae, collected by T. S. Brandegee in 1873-75. Bull. Torrey Club 6: 89, 90. 1876.

³ Bull. Torrey Club 6: 17. 1875.

3. RICCIELLA CRYSTALLINA (L.) Warnst. *Riccia crystallina* L. Without definite locality, 1873, *J. Wolf*; Sulphur Springs, *F. E. Clement*; Colorado Springs, *C. C. Haynes 1507*.

4. RICCIELLA FLUITANS (L.) A. Br. *Riccia fluitans* L. Without definite locality, 1873, *J. Wolf*. No Colorado specimens of this species have been seen by the writer. The variety *lata*, which is cited by Austin, is described in the Synopsis Hepaticarum (p. 610). It is apparently an unimportant form.

5. CLEVEA HYALINA (Sommerf.) Lindb. Golden, 1899, *E. Bethel*; West Spanish Peak, *Rydberg & Freeland*; west of Ouray, *Underwood & Selby*; Fraser, Granby, and Coulter, *E. Bethel 2* (in part), 3. Already recorded from Colorado by the writer; see *Rhodora 16: 63. 1914*.

6. REBOULIA HEMISPHERICA (L.) Raddi. Without definite locality, 1873-75, *T. S. Brandegee*; Granby, *E. Bethel 3*.

7. GRIMALDIA FRAGRANS (Balb.) Corda. Five miles west of Fort Collins, 1896, *C. F. Baker 6*; foot-hills near Fort Collins, 1896, *C. S. Crandall*; Fraser, *E. Bethel 2* (in part).

8. ASTERELLA GRACILIS (Web. f.) Underw. Boulder, 1904, *E. Bethel 4*; near Tolland, *C. J. Young*.

9. CONOCEPHALUM CONICUM (L.) Dumort. Palmer Lake, 1910, *E. Bethel*; Cheyenne Canyon, near Manitou Springs, *C. C. Haynes 1509* (in part).

10. PREISSIA QUADRATA (Scop.) Nees. Cheyenne Canyon, near Manitou Springs, 1912, *C. C. Haynes 1509* (in part).

11. MARCHANTIA POLYMORPHA L. Without definite locality, 1873, *J. Wolf*; without definite locality, *T. S. Brandegee*; Fort Collins, *C. F. Baker*; Gypsum Creek Canyon, *C. S. Crandall*; Chambers Lake, *C. F. Baker 5*; Luton Creek, *T. D. A. Cockerell*; Gunnison, *N. L. T. Nelson*; Mt. Carbon, near Gunnison, *N. L. T. Nelson 2256, 2279, 2292, 2409, 2516*.

12. MARSUPELLA EMARGINATA (Ehrh.) Dumort. Pikes Peak, 1896, *J. M. Holzinger*.

13. JUNGERMANNIA CORDIFOLIA Hook. Without definite locality, 1873, *J. Wolf*; within one hundred miles of Canyon City, *T. S. Brandegee* (not listed by Rau); Pikes Peak, *A. W. Evans*; Minnehaha, *G. E. Nichols*.

14. JUNGERMANNIA PUMILA With. Without definite locality, 1873-75, *T. S. Brandegee*. No Colorado specimens of this species have been seen by the writer.

15. JUNGERMANNIA SPHAEROCARPA Hook. Pikes Peak, 1896, *J. M. Holzinger*; Minnehaha, *G. E. Nichols*.

16. LOPHOZIA BARBATA (Schmid.) Dumort. Pikes Peak, 1896, *J. M. Holzinger*; Cheyenne Canyon, near Manitou Springs, *C. C. Haynes 1511*; Minnehaha, *G. E. Nichols*.

17. LOPHOZIA CONFERTIFOLIA Schiffn. Palmer Lakes, 1913, *G. E. Nichols*.

18. LOPHOZIA FLOERKII (Web. & Mohr) Schiffn. Pikes Peak, 1896, *J. M. Holzinger*.

19. LOPHOZIA HATCHERI (Evans) Steph. Minnehaha, 1913, *G. E. Nichols*; near Tolland, *A. J. Grout*.

20. LOPHOZIA HORNSCHUCHIANA (Nees) Dumort. *Jungermannia Hornschuchiana* Nees. Without definite locality, 1873, *J. Wolf*. No Colorado specimens of this species have been seen by the writer.

21. LOPHOZIA INCISA (Schrad.) Dumort. *Jungermannia incisa* Schrad. Without definite locality, 1873, *J. Wolf*; mostly within one hundred miles of Canyon City, *T. S. Brandegee* (not listed by Rau); Breckenridge, *J. M. Holzinger*.

22. LOPHOZIA KUNZEANA (Nees) Evans. Minnehaha, 1913, *G. E. Nichols*.

23. LOPHOZIA LYCOPODIOIDES (Wallr.) Cogn. Mt. Carbon, near Gunnison, 1909, *N. L. T. Nelson*; near Tolland, *A. J. Grout*.

24. LOPHOZIA MUELLERI (Nees) Dumort. *Jungermannia Muelleri* Nees. Without definite locality, 1873, *J. Wolf*; west of Ouray, *Underwood & Selby*.

25. LOPHOZIA PORPHYROLEUCA (Dicks.) Schiffn. Near Pagosa Peak, 1899, *C. F. Baker*; Rolline Pass, *E. Bethel*.

26. LOPHOZIA VENTRICOSA (Dicks.) Dumort. *Jungermannia ventricosa* Dicks. Without definite locality, 1873, *J. Wolf*. The writer has seen no Colorado material of this species.

27. SPHENOLOBUS EXSECTAEFORMIS (Breidl.) Steph. Pikes Peak, 1896, *J. M. Holzinger*; White Rocks, Boulder, *E. Bethel* 1; Minnehaha, *G. E. Nichols*.

28. PLAGIOCHILA ASPLENIODES (L.) Dumort. Pikes Peak, 1896, *J. M. Holzinger*; near Manitou Springs, *C. C. Haynes* 1514; Minnehaha, *G. E. Nichols*.

29. CHILOSCYPHUS RIVULARIS (Schrad.) Loeske. *Ch. polyanthus rivularis* Nees. Without definite locality, 1873, *J. Wolf*; eight miles south of Steamboat Springs, *C. F. Baker*; near Tolland, *A. J. Grout*.

30. CEPHALOZIA BICUSPIDATA (L.) Dumort. *Jungermannia bicuspidata* L. Without definite locality, 1873, *J. Wolf*; Breckenridge, *J. M. Holzinger*; Palmer Lakes, *G. E. Nichols*.

31. CEPHALOZIELLA HAMPEANA (Nees) Schiffn. Cheyenne Canyon, near Manitou Springs, 1912, *C. C. Haynes*, 1510.

32. BLEPHAROSTOMA TRICHOPHYLLUM (L.) Dumort. *Jungermannia trichophylla* L. Without definite locality, 1873-75, *T. S. Brandegee*; mostly within one hundred miles of Canyon City, *T. S. Brandegee* 49; Pikes Peak, *J. M. Holzinger*; near Pagosa Peak, *C. F. Baker*; Minnehaha, *G. E. Nichols*.

33. SCAPANIA BARTLINGII (Hampe) Dumort. Pikes Peak, 1896, *J. M. Holzinger*. Not before recorded from the United States. Possibly the specimens listed by Austin and by Rau as *S. compacta* would now be referred to this species; they have not been examined by the writer.

34. SCAPANIA CURTA (Mart.) Dumort. Pikes Peak, 1896, *J. M. Holzinger*; Minnehaha, *G. E. Nichols*.

35. SCAPANIA DENTATA Dumort. Minnehaha, 1913, *G. E. Nichols*.

36. SCAPANIA SUBALPINA (Nees) Dumort. Near Tolland, 1914, *A. J. Grout*.

37. SCAPANIA ULIGINOSA (Sw.) Dumort. Twin Lakes, 1873, *Wolf*.

38. SCAPANIA UNDULATA (L.) Dumort. Without definite locality, 1873, *J. Wolf*; Granby, *E. Bethel* 5; near Corona, *E. Bethel*; near Tolland, *A. J. Grout*.

39. *RADULA COMPLANATA* (L.) Dumort. Pikes Peak, 1896, *J. M. Holzinger*.

40. *PORELLA RIVULARIS* (Nees) Trevis. Near Estabrook, Platte Canyon, 1896, *J. M. Holzinger*.

41. *ANTHOCEROS LAEVIS* L. Boulder, 1908, *E. Bethel*.

All of the species listed are widely distributed in North America and Europe and most of them have likewise been reported from northern Asia. This is probably due to the fact that they represent northern rather than southern genera. The total absence of the Jubuleae will be noted. If any of these are discovered in Colorado they will probably represent endemic North American species. There is little likelihood, however, that the Jubuleae are largely represented in the state, although a few species of *Frullania* ought perhaps to be expected.

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JOHN B. LEIBERG*

John B. Leiberg was born at Malmö, Sweden, October 7th, 1853. When a boy of thirteen years he came to this country and at first lived in Iowa, though later moving further West. He had most of his formal schooling before leaving Sweden, but it is more accurate to say that his education never ceased, to the last he was eager for further knowledge, and for continued investigation. From boyhood he had been interested in things out of doors, and had formed the habit of close, accurate observation which never left him. But, like many busy men, he seems to have published but little. His personal character won the respect and affection of all who came into contact with him—as one correspondent writes, “He was a *good* man; no higher praise can be given.”

Before 1889 he was in correspondence with Mrs. E. G. Britton. At this time he was living at Hope, Idaho, and studying the flora of Kootenai County. The results of these collections were published by Mrs. Britton in the “Bulletin of the Torrey Botanical Club” under the titles, “An Enumeration of the Mosses Collected by Mr. J. B. Leiberg in Kootenai County, Idaho” (Vol. XVI.), and “A Supplementary Enumeration of Mosses Collected in Idaho by J. B. Leiberg.” (Vol. XVIII.) Besides the annotated list of species, these papers contained the announcement of the first collection in fruit of *Grimmia torquata* Hsch., and the description of *Hypnum* (*Thamnium*) *Leibergii*, E. G. B., a species new to science.

For many years Mr. Leiberg was connected with the United States Department of Agriculture, during which time he traveled extensively in the West, collecting freely wherever he went. He also spent a year in the Philippine Islands in the employ of the Bureau of Forestry, and later spent another year there on his own account, in the study of the flora. In 1909, accompanied by Mrs. Leiberg, he made a leisurely trip around the world visiting especially the

* The following notice of Mr. Leiberg should have appeared some time since, but the news of his death was not received for nearly a year after the event and the pressure of other work has greatly delayed the collecting of even the few notes given here.